

260 pounds. Pulse rapid and not very strong, heart tones clear; edema of legs. Urine scanty, but no albumen could be found after several examinations. No examination was made for casts.

I put him on digitaline gr. 1/5 and strychnia gr. 1/30 ever six hours. Also diuretic grs. xv every four hours and a strict diet. His urine increased in a short time to over three quarts in twenty-four hours. Shortness of breath gradually lessened and the sleepy feeling was much less. Weight decreased gradually. Lost over 30 pounds in two months' time and felt much stronger than when he commenced treatment.

On the afternoon of January 23d was taken with a severe attack of appendicitis. I was not called until about noon January 24th. After examining him an operation was recommended if he was not better in a short time. I saw him again at 5 p. m. and he was much worse, so advised an immediate operation. Pulse at this time was 130, temp. 103.5°. Urine was not examined. He was removed at once to St. Joseph's Home and prepared for the operation, which was performed early in the evening. The appendix was gangrenous; it had already perforated and a large abscess had formed. The abscess cavity was swabbed out and pieces of the gangrenous appendix were removed with forceps. The cavity was packed with gauze and the patient removed to his bed.

Pulse 148 after the operation. Monday noon his pulse was 94, temp. 101.8°. A pint of normal salt solution was administered per rectum every four hours. The quantity of urine kept up until late Monday afternoon, when it became scanty and contained a great deal of albumen. Temp. 104.2°, pulse 116. From 11 p. m. Monday until 7 a. m. Tuesday (56 hours) he secreted 14½ ounces of urine, although diaphoretics, diuretics and large quantities of water were given. During the time there was no twitching or convulsions.

Patient became delirious Wednesday night and died in coma the next morning.

VISIBLE MOVEMENT OF BLOOD IN RETINAL VESSELS.

By C. S. G. NAGEL, M. D., San Francisco, Instructor in Ophthalmology University of California.

Movement of the blood in retinal vessels had been observed in the early days of ophthalmoscopy in a few instances by Ed. Jaeger, Liebreich and von Graefe in local changes, i. e., detachment of retina and in a case of "neuritis"—also by V. Graefe several times in the asphyctic stage of cholera. Subsequently the phenomenon has repeatedly been reported in cases of so-called embolism of the central retinal artery, in a majority of which, according to our present knowledge, it has probably been due to a local endarteritis proliferans. In the *Deutsche Medicin. Wochenschr.* No. 45, 1908, Th. Rehberg gives the extensive history of a case of aortic aneurysm, observed at the University Medical Clinic of Königsberg, making the following statement regarding the eyes—"Vision somewhat lowered in right eye, F. V. normal in both. The retinal veins are relatively large compared to the arteries; the bloodstream, especially in the veins of the right eye, is markedly retarded and plainly visible, the blood column being divided into pieces of a varying size, i. e. from big granules to cylinders, which are separated by light interspaces."

From the literature at my disposal (there is also no reference in the literature given by Groenouw Zu-

sammenhang von Augen—U. Allgemein—Krankheiten in Graefe—Saemisch, 2nd ed.) and the fact that Leber (1) in his exhaustive study passing in review all experimental and clinical data extant does not mention any similar observation, I believe Rehberg's to be the first observation of the kind, and I feel justified therefore in reporting a similar, regarding the eyes though much worse, history which I have been able to follow (October-December, 1908) in my service at the University of California Hospital. Doctor Moffitt has demonstrated the patient from the medical side before the San Francisco County Medical Society. I will only give the data in so far as they would seem to be of special interest here.

J. H., ironmolder, age 29. No previous illness. November 1907, during work, sudden sensation of jumping of eyes out of head and dizziness. Gradually getting worse with pain in eyes and sensation of blood trying to rush through skull and attacks of roaring in ears. Sight gradually had been failing in both eyes, until July, 1908, permanent blindness set in in right—sight having been hazy for one day, it had gone out next morning entirely. Patient has been hoarse since March, 1908, suffered frequently from frontal headache, and at times the top of scalp seems numb. Sight has persisted in left eye, but has acted in general as in right. At present (October, 1908) it is very bad, hazy. Patient becomes blind in attempt to cross room. Spending his time in bed whilst in the hospital, patient sees best in sitting posture with head bent forward, sight getting dim and leaving entirely at times if he leans backwards or even lifts head merely, but returns promptly on lowering head again. The temporal, facial, carotid, subclavian and radial pulses are absent on both sides, the brachial and ulnar present on either side, but weak. The femoral pulses are present and those at the dorsum pedis, right and left are strong. Reflexes are normal, and so are sensations, though pinching of the skin anywhere seems to be very painful. Left side of skull very dull, especially over parieto-occipital region. Tenderness over left parietal eminence. Frequent clots of blood in right nostril since beginning of illness. Left vocal cord at first moving less than right, has become paralyzed during stay at hospital (examined by Doctor Albert B. McKee). Trigemini in sensory and motor portions intact, corneal reflexes prompt. Facial nerves intact. Blood pressure on legs October 7, maximum 220, minimum 160; October 12, 218; November 21, with Esmarch's on other leg, maximum 150, minimum 125, without Esmarch's 130 and 105. Patient had referred to occasional attacks of general convulsions with loss of consciousness and it was found that pressure on both carotids for about thirty seconds produces deep, noisy breathing with pallor of face and finally twitchings of face and arms, especially on right side. With twitching comes loss of consciousness, patient falls forward and respiration stops for a few seconds. Face then begins to flush and consciousness returns. On November 13, whilst rising in bed, patient had momentary loss of consciousness with slight, but regular, epileptic attack.

Diagnosis by percussion, etc., and Roentgenogram: aneurysma aortae. Owing to the general condition of the patient, etc., the examination of his eyes is not as complete as might be wished for, especially re. c. vis., F. V., etc.; however, I feel satisfied that the essential diagnostic features were obtained through the ophthalmoscope. The tension of both eyes is decidedly lowered (T-I). Right eye amavrotic. October 8, 1900, optical atrophy with rather indistinct outline—the vessels, however, being normal in size, especially arteries not contracted, the evidence does not point to a distinct neuritis preceding. There are retinal changes close to disk towards macula, also upwards—and since analogous, though more recent changes in left eye are also confined near posterior pole, the process in right may be, perhaps, looked upon as a secondary, ascending atrophy of nerve.

O. S. Around posterior pole, though macula itself appears free, a number of recent degenerative changes in retina *under* vessels. *Over* main v. temporal inferior two distinct roundish plaques of exudate.

7. X. o8. In main branch of v. temporal inferior o. s. a slow interrupted centripetal stream is observable, the blood column is divided into segments. This phenomenon is confined to the one vessel and to o. s.

9. X. In the vein first affected the segments are longer, moving forward in a slow and jerky way. The same appearance as shown on 7th inst. by this vein is offered to-day by the v. inferior nasal, and beginning in the other bigger veins, perhaps also in some of the smaller ones. Several of the big veins, universally broader, show a relatively smaller caliber at and near disk than some distance off. Disk somewhat pale as one would expect from the poor general arterial circulation.

16. X. The current in veins is very slow, at times ceasing. The phenomenon is seen to-day in one vein o. d.

21. X. No current visible in either fundus. Rosary appearance of affected veins.

2. XI. No visible current in either eye.—O. s. shows rosary appearance of lower veins, which are universally smaller, though still extended near pa. Arteries also are a little smaller.

The patient, who had left the hospital in December last, was seen April 8th, a. cr. strikingly improved in general health (increased weight).

Patient makes no complaint regarding left eye. Vision H m + 0.75 = 1.25 J. I in O, 24 m, p. pr. O, 16 m. L. F. V. normal for white and colors, no central scotoma. T normal. L. Pu normal and reaction n. Ophthalmoscopic. n. (especially arteries n.).

Right eye T n. Fundus n. outside of atrophic pa. which is now quite sharply outlined. The arteries in the fundus are everywhere decidedly large and of the same size as the veins, which are not enlarged. On the art. temp. sup. (only!) which, in spite of a main branch running in the same direction, is of the same size as the one accompanying vein an unusually broad and intensely white central band (reflex from

a thickened wall?) is present, no white lines alongside of vessel (under mydriasis).

As a purely physical phenomenon, there is no reason not to adopt in our case the explanation for the visible bloodstream given by Reimar (2). If the blood flows normally the red corpuscles are whirled about so violently and carried off with such rapidity that on account of their smallness they cannot be made out. With decreasing velocity of the current the individual corpuscles become noticeable at first merely as smallest particles quickly shooting past. Gradually these particles, as a result of sedimentation and agglutination, increase with greater slowness of movement until we finally notice little cylinders separated by plasma. This last stage may perhaps best be compared after Dimmer (X) to the quicksilver torn to pieces in a thermometer, only that in our case cylinders, but of universally rather uniform size, came under observation. Omitting Reimar's closer argumentation, I will only add that Reimar was able to produce experimentally the several stages as referred to by pressure on the globe until he finally got a centripetal stream in the arteries—this being always the last of the changes that begin in the veins with minute particles flowing in normal centripetal direction. The clinical importance of these phenomena lies in this "that blood circulation does take place as long as the blood columns, be they ever so thin in parts, or be covered (apparently interrupted) by thickening or clouding of walls, don't show in their farther continuity disintegration—i. e., agglutination of the formed elements. Only when the blood column is broken up and the individual segments are at a standstill is one justified to surmise a complete interruption of the blood current. Absence of spontaneous or pressure pulsation is absolutely not a sign that circulation does not take place."

That the circulation in the upper part of the body and in the head was being interfered with greatly is clear from the absence of the several pulses mentioned, further by the lowered T in the eyes which according to Leber (l. c. 118) can never be higher than the blood pressure within the eye, by which alone it is produced—and finally by the epileptiform attacks. Regarding the latter Rehberg (l. c.) reviews the literature regarding experimental and clinical data in aortic aneurysm all being in favor of the cerebral symptoms being due to anaemia through mechanical interference with the circulation and not through excitation of the vagus. It is in regard to the additional ophthalmoscopic findings, I think, that the chief special interest of our history lies. Leber's (l. c.) studies in their analysis of facts from human pathology as well as experimental have reference to complete obliteration of the circulation exclusively. Regarding clinical data Leber also considers the re-establishment of circulation after the complete block in the narrowed vessels, stating expressly that the latter is a permanent feature. We have seen that at no time an arterial contraction has been found in our case and that, as a noteworthy feature, an enlargement even of retinal arteries was found in the blind right eye at the last examination. Look-

ing upon this latter feature as of nervous origin we must yet refrain from trying to enlarge upon it in the face of the many contradictory facts found in experimental work to which Leber refers so exhaustively and judiciously. The further changes we have found in the retinal (whitish plaques, etc.) bring a clinical confirmation for Leber's findings and are of special interest in so far as they show the deleterious effects of a diminished blood supply even. The reason why this was sufficient to lead to atrophy of the optic nerve in the right eye would seem to lie in the great dependance of the retinal ganglion cells on the supply of oxygen (in contradistinction to nerve fibres (Leber, l. c.)) In the absence of pathological pigment, even in the right retina, we can not say whether permanent changes have resulted through any process in the choroid. (XX).

(X) Der Augenspiegel, etc., 1893.

(XX) C. S. G. Nagel, Archives of Ophthalmology, 1900, XXIX, Nov. 5.

For the general data in the foregoing history I am indebted to my colleagues, Drs. Moffitt and Ash.

REFERENCES.

- (1) Die Circulations und Ernährungs verhältnisse des Auges, Graefe-Saemisch, second edition.
- (2) Zeitschr. f. Augenhkd., March, 1903.

SOCIETY REPORTS

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Regular Meeting July 13th, 1909.

Dr. Emmet Rixford:

(a) A Case of Compound Pott's Fracture and Colles' Fracture.

This young man is a police officer who stopped an automobile in the Park on Christmas day last. He received a compound Pott's fracture, the whole of the ligamentous apparatus being torn away from the front of the joint and the end of the tibia, even including the internal malleolus, which was not broken, being thrust out through the tear. On the other foot he received a posterior dislocation of the great toe, on the right wrist a Colles' fracture and at the left wrist a fracture of the lower end of the ulna. The interest in this case is particularly in the excellent functional result of the ankle where the whole ligamentous apparatus was torn across and the thing exposed to infection. He was fortunately taken care of very quickly after the accident at the Central Emergency Hospital, where the wound of the joint was thoroughly cleaned, so that there was very little to do for it after he got under my care. We trimmed up the ligaments and put the ends of the bones together, closing the wound with drainage. Practically primary union resulted with, as you see, the present perfect form and considerable range of useful motion. As for the dislocation of the great toe, the posterior dislocation is quite similar to the posterior dislocation of the first phalanx of the thumb, and it is just as hard to reduce. I tried the classical manipulation of hyperextension, traction and flexion, but failed, and circumduction worked no better. Whether it was the capsule that grasped the head of the bone, as is the theory of some, or whether the

sesmoid bones had got into the way of the process on the inner side of the head of the bone, or whether the head of the meta tarsal was grasped between the tendon of the long flexor and the abductor pollicis and flexor brevis, the traction closing them together (which is the generally accepted theory), it was interesting to me to try to find out. The first thing I did after failure in reducing was to make a subcutaneous section, with a small knife, of the capsule as is advised by Stimson, and to see what effect that had. It had no effect whatever; reduction was no easier than before. Next I exposed the joint by a little larger incision to see whether I could manipulate the tendons with the sesmoid bone; it finally resulted in a pretty wide section of the ligamentous apparatus of the joint, and still I was unable to reduce the dislocation. I succeeded only by lifting the long flexor tendon out from behind the shoulder on the inner side of the head of the meta tarsal bone, which was done with an elevator. The moment that was done the dislocation was reduced. I believe from the result in this case that posterior dislocation of the great toe and also that of the thumb can be managed by a small incision and so placed as to permit a blunt dissector or a prying instrument to be put in on the inner side and then prying off the tendon on the inner side from behind the expanded end of the bone. This manipulation will be facilitated by flexing the phalanx dorsally to relax the tendons.

(b) A Case of Tuberculosis Peritonitis.

This little boy in 1906 was brought into the hospital by Dr. Max Magnus with a tuberculous peritonitis; it was a typical case, with ascites, distended abdomen and hard masses to be felt in the omentum. We opened the abdomen, let out the fluid, examined the lesions and closed the wound. As soon as the wound was healed the patient was taken across the Bay, where he has been living ever since. I have not seen him for three years and he is apparently now a perfectly normal child. This is simply an example of the probable importance of the out-of-door treatment of tuberculosis more than anything else, but at the same time sharing the value of laparotomy in tubercular peritonitis. There was nothing used to wash out the abdomen. The primary focus was not found, the peritoneum was studded with tubercles everywhere and masses in the omentum were large enough to be felt before opening the abdomen.

(c) A Case of Tuberculosis of the Spine, Wrist and Anal Region.

This young man exemplifies another phase of tuberculosis. Two years ago he returned from the East with a fatal prognosis. He had a tuberculosis of the anal region which was so extensive that the tissue was undermined completely. The area of infiltration was about as large as my two hands outspread; there were ramifying fistulae in many directions; patient was greatly emaciated, had fever, night sweats, etc. The question of operation was being considered, but we decided to take the rather desperate chance of radical excision. The whole tuberculous mass was dissected out and little islands of skin left were patched together as best we